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Boehmeria nivea biomass production of a promising forage species

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Key words : biomass production, *Boehmeria nivea*, bromatological composition, cutting frequency

Introduction The growing demand of protein for food for humans in the world has brought about the use of different animal species and the search for the necessary raw materials for feed production. A plant that could be used is ramie (*Boehmeria nivea*), which originated in the subtropical area of China. It is frequently cultivated for forage production (Calle and Uribe, 1969), as protein source in cattle, sheep, goat, pig and poultry feeding (Dos Santos *et al.*, 1995). In this work, carried out at the EEPF "Indio Hatuey", nine *Boehmeria nivea* varieties were evaluated, in order to determine which of them had better productive performance and good quality to be extended under production.

Materials and methods The work was carried out at the Experimental Station of Pastures and Forages "Indio Hatuey", at 19 m above sea level on a medium fertility Ferralitic red soil. Nine varieties of *Boehmeria nivea*: Junan 8, Clon A 8, Junan 3, Clon A 3, Clon A 1, Miyosaki 1-2, Clon A 5, Junan 7 and Junan 4, were evaluated, in nine plots of different sizes with neither irrigation nor fertilization. Yet, in this work we express biomass production in kg/m² in order to give uniformity to the result presented. Five height measurements were carried out per plot, with a wooden graduated ruler of 1 cm sensibility; and the biomass produced by each variety within the limit of the above-mentioned plots, was weighed with an HS-30 hand scale of 30 kg with 20 g of sensibility.

Results and discussion In this preliminary evaluation an average of 33 days was achieved (Figure 1). The average heights, reached after each cutting by the different varieties were: Junan 8, 0.86 m; Clon A 8, 0.71 m; Junan 3, 0.83 m; Clon A 3, 0.97 m; Clon A 1, 0.51 m; Miyosaki 1-2, 0.56 m; Clon A 5, 0.32 m; Junan 7, 0.67 m and Junan 4, 0.55 m. As can be observed, the most outstanding varieties in this indicator were the first four. Junan 8, Clon A 8, Junan 3, Clon A 3 and Junan 7 had a better performance regarding biomass production during the year, in the rainy as well as in the dry season, as shown by Figure 1.

The bromatological characteristics of the four most attractive varieties are shown in Table 1.

Table 1 Bromatological characterization of the average of five cuttings of four ramie varieties.

Variety	DM (%)	C (%)	Ca (%)	P (%)	Mg (%)	EE (%)	ADF (%)	Cel (%)	Lig (%)	NDF (%)	KOH (%)
Junan 8	87.35	18.55	3.34	0.34	1.11	1.23	39.89	9.02	26.69	47.86	60.13
Clon A 8	87.97	20.23	3.69	0.37	0.93	1.11	35.10	8.77	23.77	53.56	61.71
Junan 3	88.03	19.37	3.82	0.35	1.01	1.79	35.26	8.67	22.97	49.33	61.68
Clon A 3	88.29	19.24	3.35	0.34	0.99	1.11	40.45	8.98	27.93	55.09	61.78

Note : The crude protein results could not be obtained

The ramie varieties that have the highest cumulative biomass productions are: Junan 8, 21.79; Clon A 8, 30.08; Junan 3, 44.07; Clon A 3, 32.26 and Junan 7, 41.60 kg/m². According to this result and the bromatological characteristics, this plant has good quality forage production for animal production, coinciding with the reports by Dos Santos *et al.* (1995).

Conclusions This plant has good productive characteristics and bromatological potential for animal feeding, standing out the variety Junan 3. Under the edaphoclimatic conditions and with the duration of this trial, cuttings every 30 or 35 days are recommended for forage production, although longer evaluations must be carried out in order to find out if there are risks of affecting the plantation survival.

References

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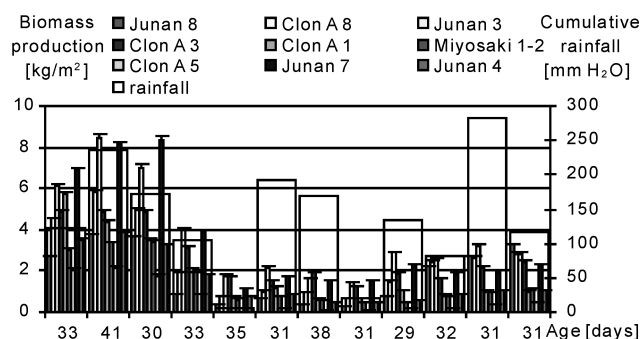


Figure 1 Age, biomass production and cumulative rainfall, between cuttings, of nine ramie varieties.